NavMed 369 RESTRICTED

NAVY DEPARTMENT

BUMED NEWS LETTER

a digest of timely information

Editor - Captain F. W. Farrar, (MC), U.S.N.

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Circular Letters:

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The Toxicity and Potential Dangers of DDT to Humans and Warm-Blooded Animals: Early in 1943, the Industrial Hygiene Research Laboratory of the National Institute of Health began a study of the toxicity and potential dangers to human beings and warm-blooded animals of DDT when used as a dust, spray, mist, and aerosol.

DDT is a white, crystalline powder, very insoluble in water but soluble in oils and certain organic solvents. It is tasteless, and when pure, practically odorless. When DDT is applied in solutions, emulsions, or as a powder, it adheres to any surface with which it comes in contact, and for this reason it is not very liable to form a dust upon agitation of the air. In the development of DDT insecticides, it has been found necessary to decrease to relatively small size the particles of the mist, spray, aerosol, and smoke. During respirations these particles or droplets, because of smallness of size, can reach the pulmonary alveoli which constitute a large area for absorption. Because of the small percentage of DDT required for insecticidal purposes, the actual concentration of DDT in the air is relatively small compared with the solvents used. For this reason, in many instances the major exposure is to the solvent which may itself produce irritation of the skin and mucous membranes of the respiratory and upper gastro-intestinal tracts, and in sufficient concentration may cause systemic effects such as nausea, vomiting, fatigue, headache, and other manifestations. Only the least harmful solvents have been recommended for use.

In the warm-blooded animals studied, it was found that the lethal dose of DDT with any route of administration varied considerably with different species, ranging from about 250 mg. per Kg. for mice to over 1000 mg. per Kg. for goats. Young animals are generally more susceptible than adults.

In the use of DDT insecticides on, or in the presence of domestic animals, the trait of certain ones to lick themselves extensively should be considered.

Animals poisoned by DDT manifest hyperexcitability, generalized tremors, clonicotonic type of convulsions, and coma ending in death. The convulsions can be elicited by mechanical stimuli such as noise and jarring. The pathological findings in animals fatally poisoned, either acutely or chronically, are considered not sufficiently marked in themselves to be the cause of death. It would appear that the mechanism of action of DDT is essentially of a functional character. This would account for the lack of observable residuals in animals that recover from severe DDT poisoning.

Careful studies have failed to reveal toxic effects on the liver, kidneys, or blood and blood-forming tissues.

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In rabbits, DDT is partly oxidized to bis(p-chlorophenyl)acetic acid. In both animals and man the acetic acid metabolite (DDA) has been recovered from the urine.

Pure DDT does not cause irritation of the skin in either animals or human beings, nor is there definite evidence of a sensitizing effect on the skin or of the production of other allergic reactions such as asthma. It should, however, be emphasized that certain solvents used in the preparation of DDT mists, sprays, and aerosols are in themselves skin irritants when in sufficient concentration. It is also pointed out that contamination of the skin with some of these solvents may produce such symptoms as paresthesias and anesthesias and that the symptoms produced by the solvents themselves, either locally or systemically, set in rather promptly whereas those symptoms produced by DDT develop only after a latent period of several hours.

In experimental studies in human beings, one subject, with an empty stomach ingested 475 mg. of DDT dissolved in olive oil. No signs or symptoms were observed. Evidence of absorption of DDT was proven. Some time later, the same subject, in a fasting state, ingested 770 mg. Very careful studies including electrocardiograms and electroencephalograms failed to reveal any evidences of abnormality. Absorption had occurred as evidenced by the presence of DDA in the urine, which showed a peak during the first 24 hours and thereafter decreased gradually. Small amounts of DDT were still present 2 weeks after it had been ingested.

The authors have not been able to recover DDT in unaltered form from the urine.

The prolonged excretion following a single dose is probably due to the fact that DDT is stored in fat tissues and is gradually released. Animal studies have shown that DDT is also excreted in the milk. (See Bumed News Letter, Feb. 1, '46, p. 14) In this connection it is considered that because the quantities of DDT recovered from the milk and body tissues have been so small compared with the amount administered, it appears very unlikely that the ingestion of meat or milk of animals exposed to DDT, under the normal use of insecticides containing DDT, would produce toxic effects in man.

The authors believe that the repeated exposure of human beings to small amounts of DDT causes practically no cell damage, and although the storage of DDT in the tissue takes place in increasing amounts, there is no cumulative damage.

The authors state that since the introduction of the use of DDT by the armed services, suspected cases of DDT poisoning have been brought to the

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attention of the Industrial Hygiene Research Laboratory, and that up to the date of reporting, there have not been any cases in which the signs and symptoms were considered to be due to DDT per se. The authors considered that the signs and symptoms experienced by the patients were produced by the solvent in each case studied.

Treatment in DDT poisoning is symptomatic. The prevention of further absorption is important. For removal from the skin, wash with soap and warm water. Use gastric lavage with warm water and saline catharsis to remove any DDT still unabsorbed in the gastro-intestinal tract. Castor oil should not be used. The results from studies in animals indicate that tremors and convulsions can be controlled by phenobarbitol which may prove life-saving even in severe cases. (Note: Based upon information made available subsequent to this report and as contained in the note on the mechanism of action of DDT in insects, crabs and crayfish, printed in the Bumed News Letter of 1 March 1946, calcium preparations might prove valuable, assuming that the mechanisms of action in man might be similar. -Ed.)

Because of the wide use that has already been made of DDT, and the anticipated even more extensive use of it, it is to be expected that some disease conditions not too readily diagnosed may be credited erroneously to exposure to DDT.

In summary, DDT has toxic properties which require certain precautions in its use. Contamination of the skin and garments with concentrated solutions of DDT in oily solvents should be avoided, and any that spills on the skin should be removed as soon as possible by washing with soap and water. The directions for the use of commercial preparations should be followed carefully. All food and culinary gear should be protected from contact with DDT. (Medical Annals, Dist. of Columbia, 1 Jan. '46 - Neal and Von Oettingen)

Note: The information in this report supplements that contained in the Bumed News Letter of 24 November 1944.

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The Sulfonamides in Shigellosis: As a result of studies on the acute diarrheal diseases carried out under the direction of Dr. A. V. Hardy by the U.S. Public Health Service, the following conclusions were reached concerning the use of the sulfonamides in shigellosis:

The sulfonamide of choice for the treatment of shigellosis is sulfadiazine. This drug is effective at a moderate dosage; it has low toxicity and is generally

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available. Sulfapyrazine also may be highly recommended when available. Of the poorly absorbed sulfonamides, sulfasuxidine is the compound of choice.

The recommended dosage of sulfadiazine or sulfapyrazine for adults is 4 Gm. daily; of sulfasuxidine, 20 Gm. daily. These should be given for a minimum period of 7 days, unless the patient has two consecutive negative cultural tests before the end of the period. Smaller doses for a shorter time are effective in most cases, but the larger amounts are recommended to minimize the risk of the development of sulfonamide-resistant organisms.

In acutely ill patients with troublesome vomiting, treatment may be initiated with sodium sulfadiazine given parenterally. Medication should be given by mouth as soon as it can be tolerated.

In those places where enteric infections spread readily, as in institutions, effective isolation for patients with shigellosis during and following treatment must be required. Patients with infections which fail to respond to sulfonamide treatment need to be isolated with particular care.

Cultures for Shigellae should be employed to guide treatment and to regulate isolation. Tests every other day during treatment, beginning on the third day, are adequate. The sulfadiazine treatment may be discontinued on the seventh day and the patient released from isolation when two consecutive cultures are reported as negative. If the cultural test on the seventh or ninth day is positive, trial of a 7-day course of sulfasuxidine is warranted.

Multiple negative cultures should be obtained before releasing a patient who has had a sulfonamide-resistant infection.

Sulfonamides may be used "prophylactically" in Flexner and Schmitz infections. When the prevalence of the infection in a group is 10 per cent or more, the treatment of all persons within the group is justified in order to free the group of infection. One gram of sulfadiazine administered twice daily for 7 days is recommended. There should be at least two post-treatment surveys by the culture method, and any person found positive should be isolated at that time and given full therapeutic doses of sulfonamide. Smaller doses may effectively suppress the development of clinical disease, but this should be recommended only in those emergencies which may occur in military practice.

Chemotherapy is to be used in acute diarrheal diseases with dehydration only when appropriate measures have been taken to restore and maintain normal hydration.

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All persons under treatment must be followed adequately for the early detection of any signs of drug toxicity.

The sulfonamides have a high value in shigellosis, both in the treatment of clinical cases and in the control of spread of the infection to others. (Pub. Health Reports, June 14, '46)

Note: This material supplements that contained in Bumed News Letter of 2 Feb. 1945.

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Alcohol in the Treatment of Angina Pectoris: The authors undertook this study to obtain an objective evaluation of the use of alcohol in the treatment of angina pectoris.

Observations were made on 19 men and 2 women, aged thirty-nine to seventy-five years, who had had angina pectoris for periods of from six months to fifteen years. None of the patients was in congestive failure, and only one had had a recent cardiac infarction. Each patient had been a regular weekly visitor to the Angina Pectoris Clinic of the Beth Israel Hospital for from four months to thirteen years, during which time the objective response to a wide variety of medications including nitroglycerin had been repeatedly determined.

During the period of testing with alcohol, the patients received only placebo or other ineffective medication. The ability of the patients to perform work was measured by a standardized exercise tolerance test which consisted of continuously ascending and descending a two-step staircase in a room having an air temperature of about 50° F. until angina developed. Only one test was performed per day, and no test was made if the patient had taken nitroglycerin in the preceding two hours.

In 8 patients repeated measurements were made of the duration of induced attacks of angina pectoris when not treated and when given one ounce of whiskey immediately at the onset of the attack. One patient whose untreated attacks averaged 62 seconds in duration demonstrated a decrease in the duration of pain to an average of 46 seconds when given one ounce of whiskey immediately at the onset of an attack. In the other 7 patients, no measurable effects occurred. Five of these patients had at some time in the past attempted to obtain relief from attacks of pain by drinking whiskey. One had obtained no relief. The other four believed that whiskey had been beneficial. However, nitroglycerin was their drug of choice for the treatment of attacks.

The amount of work that could be performed before pain was precipitated was determined in 21 patients at varying intervals up to 90 minutes after a

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single one-ounce dose of whiskey. Five patients were able to do from 18 to 27 per cent more work. When these five patients were given 0.3 mg. of nitroglycerin two minutes before exercise, from 60 to 75 per cent more work could be done by four, and only 13 per cent more work than usual could be done by one. Of the 16 patients who showed no increase in their ability to perform work after the alcohol, when given nitroglycerin an increase of from 60 to 200 per cent was observed in 3, increases of from 21 to 56 per cent occurred in 5, and no increase resulted in the other 7.

In one phase of the study, nine of the 21 patients were placed on 4 one-ounce doses of whiskey daily for one week and then a one-ounce dose immediately before testing. Although two of these patients had no attacks of cardiac pain during the week, they showed no change in exercise tolerance. Five of these patients felt better while on regular doses of whiskey. Of these five, one showed a 23 per cent increase in exercise tolerance, one showed a 33 per cent decrease, and three showed no change. Two of the nine patients experienced an increased frequency and severity of angina which was so marked in one that it became necessary to discontinue the whiskey.

Eight patients were tested while holding a half ounce of whiskey in the mouth. There was no increase in exercise tolerance.

The authors state that although a coronary vasodilating action has been assumed for alcohol, there exists little experimental evidence that it occurs, whereas increases up to 50 per cent in coronary blood flow have been shown to result from the use of various theobromine derivatives.

Although no increase in ability to work resulted from this type of therapy, and no decrease in the duration of an attack of angina pectoris occurred in the majority of patients, alcohol, nevertheless, seems capable in some cases of producing a certain type of subjective comfort. This may be of some value in the general management of the patient with angina pectoris. It is doubtful whether such medication has a specific effect on the course or severity of the disease. (New England J. Med., May 2, '46 - Stearns, Riseman and Gray)

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Notes on the Streptomycin Control Program: At a meeting of the Streptomycin Producers Industry Advisory Committee of the Civilian Production Administration on 30 April 1946, some of the items discussed and pointed out were as follows:

The Streptomycin Clinical Research Program is being continued.

The manufacture of streptomycin is still on an experimental basis. Although the amount produced has been showing only slight increases each month, it is expected that in the next several months the output will increase sharply, and that the production monthly during the last quarter of 1946 may be about three times what it was during April 1946.

Some of the clinical testing can soon be discontinued because the data accumulated showing the usefulness and limitations of streptomycin in the treatment of certain disease conditions is adequate.

Next to a long-range study of the treatment of tuberculosis, extensive research in whooping cough might be desirable when the supply of streptomycin increases sufficiently.

No deviations from the rules governing the release of streptomycin are being made, and cases that do not come within the program are being denied. Requests for supplies of streptomycin continue to be investigated carefully before they are approved or denied.

In experimental studies on the treatment of typhoid infection in mice it has been shown that streptomycin at certain dosage levels greatly increases the mortality rate. In much higher dosage ranges the same phenomenon can be demonstrated with penicillin. Some importance was given to the problem of the possibility of producing a stimulating effect on the progress of an infection instead of the desired inhibiting effect.

Instances have occurred in which streptomycin has been known to kill one species of organisms with the result of stimulating the growth of another. Observations suggest that the matter of bacterial antagonism may be highly significant.

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Rehabilitation Following Starvation in Man: After semistarvation, the rehabilitation diet must first and foremost emphasize an approach to caloric adequacy. Every effort should be made to attain a goal of providing a total daily caloric intake of from 1000 to 1500 calories above the semistarvation average. This level should be reached by progressive steps over a period of a few weeks and should be continued for not less than from three to six months. The relief diets provided should utilize whole grains and unprocessed foods to the maximal possible extent. If the total relief diet provides less than 2000 calories daily, special efforts should then be made to provide high protein foods and concentrates such as those derived from soy beans and milk products. If the total

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relief diet is as high as 2500 calories daily, there is no justification for special attention to high protein foods. In the absence of specific signs of vitamin deficiency there is no justification to provide supplementary vitamins unless the relief diet is demonstrably low in vitamins. Indiscriminate administration of extra vitamins and proteins is to be deprecated. Except in the case of men at hard manual labor, the daily caloric intake should not exceed 4000 calories.

The weight gain is a useful index of rehabilitation. A proper recovery rate would be one where about 60 per cent of the lost weight is regained in three months and about 90 per cent in six months. A persistence of anemia is a reflection of changes induced by semistarvation and is relatively uninfluenced by dietary measures. The edema in semistarvation and in rehabilitation is not necessarily a reflection of specific inadequacy of protein intake nor of cardiac failure. Bradycardia, skin peculiarities such as pigmentation and folliculosis, and depression of tendon reflexes are to be expected in simple caloric undernutrition if this is severe; these changes do not necessarily suggest any vitamin deficiencies. (OEMcmr-27, Keys et al., Univ. of Minn. - CMR Bulletin #77)

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Report of Study on Vaccination Against Tuberculosis with B.C.G.: By 1935 the combined evidence from world-wide studies indicated that BCG (Bacillus of Calmette and Guerin) vaccine might be an effective preventive against tuberculosis, and consideration was given to utilizing it to reduce the high incidence of the disease among North American Indians. However, since there was uncertainty at that time about the validity of many of the reports on the subject, it was decided to conduct first a controlled study of the value of the vaccine rather than an uncontrolled broad-scale program of vaccination.

A preliminary summary of the results of the first 3 years of the study was reported in a previous paper (Am. Rev. Tuberc., 45:41-52-1942). The present report is based on observations made during 3 additional years. Differences in the morbidity from tuberculosis between the preliminary report and the present one are accounted for by changes made as a result of subsequent examinations and, to some extent, by changes in definitions and interpretations.

The group under study consisted of 3,007 North American Indians, of from 1 to 20 years old, who were selected from a larger group on the basis of a negative tuberculin reaction. BCG vaccine was given intracutaneously to 1,550, with 1,457 serving as controls. These persons were followed for 6 years with annual tuberculin tests and chest x-ray examinations.

Tests of the vaccinated and control groups as to age, amount of exposure to tuberculosis, and completeness of follow-up indicate that the two groups are comparable in these respects.

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Results from the analysis of the records show that BCG vaccination is associated with marked protection against the development of tuberculosis as measured by the mortality and morbidity experience in the two groups.

During the 6-year period, 60 deaths from all causes occurred among the 1,457 persons in the control group compared with 34 among the 1,550 vaccinated. In terms of deaths per 1,000 person-years, the rates were 7.2 and 3.8, respectively. There were 28 deaths assigned to tuberculosis among the controls as compared with only 4 such deaths among the BCG vaccinated group.

A comparison of the cases of tuberculosis, as determined mainly from radiological evidence and supplemented by data from tuberculin tests, revealed similarly wide differences between the two groups. Including fatalities from tuberculosis, 48 cases were classified as extrapulmonary tuberculosis or advanced pulmonary tuberculosis among the controls, while only 9 such cases were found among the vaccinated. There were 20 cases showing x-ray evidence of minimal lesions among the controls, and 8 among the vaccinated. The corresponding figures for patients showing enlarged hilar glands were 99 and 19 respectively, and for pleural effusion, 18 and 4 respectively.

The comparison for total incidence of tuberculosis (cases of all types and deaths) is that of 185 among the controls, and 40 in the vaccinated. In terms of cases per 1,000 person-years, the rates were 24.3 and 4.7, respectively.

There is no evidence from the analysis that a diminution of immunity occurs with the passage of time after vaccination. On the contrary, indications were that the protection may be greater in the later than in the earlier years after vaccination.

The total incidence of cases among the controls was nearly constant for all age groups, while among the vaccinated there was a marked decrease in incidence with advancing age. The evidence is suggestive, although not conclusive, that BCG vaccination may be more effective in the older than the younger children.

Some variation in the effectiveness of the different lots of vaccine was noted. (Pub. Health Rep., June 7, '46 - Aronson and Palmer)

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Comparison of Vollmer Patch Test with Intradermal P.P.D. Test: The Vollmer Patch and Intradermal P.P.D. (Purified Protein Derivative) tests were compared in a series of 460 children in the course of a Roentgen ray and clinical study of primary tuberculosis.

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Of these 460 children, 115 reacted to at least one of the tests, and by other studies were considered to have primary tuberculous lesions. Both tests in 100 of these 115 children were positive. In 14 children the P.P.D. test was positive and the Vollmer patch test was negative. In one patient the P.P.D. test was negative and the Vollmer patch test was positive. These results indicate that neither test is infallible. This failure of the patch test in 14 patients with tuberculous lesions represented 3 per cent of the entire series of 460, and 12 per cent of the 115 patients who showed lesions of primary tuberculosis.

The Vollmer patch test has the advantage of being painless, and it can be administered easily by an office or dispensary assistant. The author points out, however, that in any large-scale testing or in routine office or dispensary testing a certain number of patients who would show a positive test by intradermal P.P.D. will be negative by the patch test, and that these negatives which would be missed by the patch test represent a sizeable percentage of positive reactors by the P.P.D. test. The author also mentions that in a case of tuberculosis of bone, for example, on the basis of his own experience, the chances that the patch test would show a negative reaction would be 1 out of 100. (Arch. Int. Med., April '46 - A. D. Briggs)

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Sensitivity of the Tuberculin Patch Test (Vollmer-Lederle): Two hundred and eighteen patients of the Outpatient Dermatological Clinic of the Long Island College Hospital were used to compare the sensitivity of the Vollmer-Lederle Patch Test with the intradermal test (both using old tuberculin). The patients, whose complaints varied widely, ranged in age from three to 70 years with a maximum number in the age group of from 11 through 20. The author found that the sensitivity of the patch test equaled that of the intradermal test in those patients who were sensitive to 0.001 mg. or less of old tuberculin. For those not reacting to 0.001 mg. but reacting to 0.01 of old tuberculin intradermally, the patch test was positive in 86.7 per cent. As the sensitivity of the individual decreased, the discrepancy between the two tests increased. The author points out that as the amount of old tuberculin commonly employed for the detection of tuberculosis by the intradermal test is as high as 0.1 mg. of old tuberculin, it follows that the patch test is an inadequate measure for the routine testing of an unselected group for tuberculosis. It is concluded that the patch test is suitable only for individuals highly sensitive to tuberculin and that all nonpositive patch tests should be followed by the intradermal test using injections of not less than 0.01 mg. of old tuberculin. (Arch. Dermat. and Syph., Oct. '45 - Lowenthal)

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(Not Restricted)

Influence of Iron Salts on the Toxicity of Lead: The relationship between the toxicity of lead and the dietary level of other elements has been studied extensively. Calcium and phosphate have been especially implicated in modifying the effects of the administration orally of lead salts. Because the influence of iron compounds on the development of lead poisoning has received little study, the authors, working in the Industrial Hygiene Research Laboratory at the National Institute of Health, USPHS, directed their attention to this problem.

It was found in these studies carried out in rats that iron salts interfered in some way with the toxicity of lead. This was deduced from the fact that the depression of growth rate, the anemia, and red cell polychromasia were reduced or absent in those rats given supplements of ferric citrate or ferrous sulfate while on diets containing lead acetate. Ferric citrate as 1.12 per cent of the diet gave protection. One fourth of this amount was less effective. About 0.2 per cent of the diet as ferrous sulfate had a protective action. (Sodium citrate was ineffective.) The development of anemia by the rats receiving lead acetate was not related to an inadequate iron content of the basal diet as evidenced by the fact that the rats receiving the same basal diet but no lead acetate did not manifest any anemia.

The mechanism of action of iron salts in counteracting the toxicity of orally administered lead in these studies has not been established. However, experiments in progress indicate a much lower lead content in tissues of rats the diets of which contained supplements of iron citrate. A possible explanation for these findings would be that iron citrate interferes with the absorption of lead. (Proc. Soc. Exper. Biol. & Med., March '46 - Heppel and Kornberg)

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Metabolism of Inorganic and Hemoglobin Iron: Uncertainty exists regarding the relative therapeutic effectiveness of iron administered by mouth and by parenteral injection. Furthermore, the immediate fate of the iron contained in transfused erythrocytes and in intravascularly liberated hemoglobin is obscure. These problems were investigated by means of the technic using radioactive iron. Inorganic salts of iron, normal human erythrocytes, and hemoglobin solutions "labelled" with radioactive iron were administered to human subjects by mouth and by intravenous injection. The extent and rate of utilization of the labelled iron in the circulating erythrocytes of the recipient were determined. It was found that the rate of utilization of iron is identical regardless of the mode of administration. Thus, the iron liberated from erythrocytes or hemoglobin destroyed after transfusion appears in the erythrocytes of the recipient just as rapidly but not more so than inorganic iron given by mouth

or injection. Utilization is complete in approximately 21 days in all instances, and approximately 60 per cent of the amount of iron absorbed appears in the circulating erythrocytes, an amount proportional to the percentage of total body iron existing in circulating erythrocytes.

These findings indicate that once iron has been introduced into the body it enters a "metabolic pool" of body iron and is metabolized in identical fashion regardless of its mode of entry. The rate of metabolism of this labelled iron sheds new light on the metabolism of iron and on the rates of erythropoiesis and hemoglobin formation. (OEMcmr-372, Ross, Mass. Memorial Hosp., Boston, Abs. for publication - CMR Bulletin #78)

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Staphylococci and Streptococci of Skin: The results of cultures for staphylococci and hemolytic streptococci from dermatophytosis of the feet and other cutaneous infections were contrasted with those from relatively normal skins.

Group A, C, G, and B streptococci were secured from the lesions studied, the last in negligible numbers. Group A was usually associated with the more severe infections. However, strains of groups C and G appeared capable of producing infection and were common as secondary and transient invaders in chronic dermatitis.

Coagulase-positive staphylococci were recovered from nearly 20 per cent of normal skins and with increasing frequency from lesions, in proportion to the severity of the inflammation. Coagulase-negative staphylococci were found to be numerically about the same in all cases studied except those classed as normal or as simple desquamation between the toes, in which the incidence was higher corresponding to the less frequent recovery of coagulase-positive strains. Most coagulase-negative staphylococci appeared to have no bearing on the lesions studied. However, a few coagulase-negative but mannitol-positive strains which were isolated were probably pathogenic. (OEMcmr-190, Rebell, Columbia Univ., MS. for publication - CMR Bulletin #78)

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Sensitization to Penicillin: Dermatitis, including urticaria and erythematovesicular reactions, occurred in 11 per cent of cases treated for cutaneous infections with penicillin. After treatment with penicillin ointment, 15 per cent of the patients were shown by patch or intradermal tests to be sensitized. In patients with eczematous lesions, sensitization was demonstrable in 25 per cent. Sensitization was usually localized to limited areas of skin and was frequently transient. No severe generalized and completely disabling eruptions were encountered.

Sensitization severe enough to prevent systemic treatment with penicillin was encountered in less than 1 per cent of the cases. (OEMcmr-190, Hopkins and Lawrence, Columbia Univ., MS.for publication - CMR Bulletin #78)

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Enhancement of Action of Antibiotics: The inhibiting action of penicillin or of streptomycin on a number of organisms can be greatly increased by the addition of certain substances, some of which are known enzyme inhibitors. Enhancement of antibiotic action has been demonstrated with S. dysenteriae, S. ambigua, E. coli, Staph. aureus, and B. cereus, by means of a quantitative turbidimetric assay of growth. Among substances active in this respect are iodoacetic acid, sodium fluoride, sodium azide, merthiolate, cetyl pyridinium bromide, crystal violet, and mapharsen. The amounts of the inhibitor needed vary from those causing negligible inhibition in the absence of the antibiotic, to those giving 50 per cent inhibition of growth. A number of anomolous effects have been obtained when the relative amounts of antibiotic, inhibitor, and inoculum are varied. (OEMcmr-499, H.P. Treffers, Yale Univ., Abs. for publication - CMR Bulletin #78)

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Magnification of Electron Microscope Doubled: The useful magnifying power of the electron microscope has been increased from 100,000 diameters to more than 200,000 diameters by an improved magnetic lens developed by Dr. James Hillier, aided by Perry C. Smith, at the RCA laboratories in Princeton, N.J.

In a paper communicated to the American Institute of Physics, Dr. Hillier reported that he has succeeded in improving the magnetic lenses that focus the electron beams to such an extent that it is now possible to distinguish particles separated by as short a distance as 13 Angstrom units, or about 50 billionths of an inch. Dr. Hillier pointed out that numerous technical problems still await solution before such high resolving power will be available to scientists generally.

Just how much this new development will affect science is difficult to predict, but it is thought that structural details of large molecules and the action of drugs on bacteria will be among the things that will become visible. Actual visual pictures of molecular structure would greatly increase knowledge in medicine as well as in all the other fields of science. (Science Service, June 4, '46)

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Reports on Research Projects:

X-533
Report No. 3
13 May '46

Evaluation of Six Commercial Means of Odor Control for Use in Inhabited Spaces.

Six commercial odor control agents were evaluated for effectiveness in occupied spaces. Only activated carbon was effective. The other five agents failed to reduce the odor level under the conditions of the tests. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Doherty and Consolazio)

(Not Restricted)

X-332
Report No. 2
14 May '46

An Evaluation of the Effectiveness of Various Agents Against Escherichia Coli in Vivo.

A series of hitherto untested organic compounds, as well as streptomycin, penicillin, two sulfonamides, and Escherichia coli bacteriophage, were assayed for chemotherapeutic activity against an E. coli infection in mice.

Streptomycin and E. coli bacteriophage proved to be quite effective against this infection. Animals receiving streptomycin did not even manifest signs of illness. Sulfadiazine and sulfamerazine in maximum tolerated doses were partially effective.

None of the other compounds tried proved to be of any value. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Stormont and Williams)

(Not Restricted)

X-588
Report No. 2
3 May '46

Determination of the Effect of Drinking Water Containing 3 ppm Copper.

Twenty-five men drank 1 pt. of distilled water containing copper 3 ppm. daily for eight days, and 23 men drank this water daily for seven days. One man had nausea once, one man had nausea with vomiting once, and a third man had nausea twice and nausea with vomiting once.

As a control procedure, 1 pt. of tap water was drunk daily by these subjects. One man had nausea with vomiting once.

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Reports on Research Projects (Cont.):

X-588
Report No. 2
(Cont.)

Seventy to 80 per cent of the men noticed the taste of the water containing copper and usually thought it was unpleasant.

The water containing copper produced little observable gastric disturbance and no other symptoms of toxicity, but from the standpoint of palatability, it would appear inadvisable to allow more than 3 ppm. of copper in drinking water for shipboard use. This is the limit recommended by the U.S. Public Health Service for drinking and culinary water supplied by common carriers in interstate commerce.

In a longer experiment, subjects might become accustomed to the taste of water containing 3 ppm. copper so that its taste would not be objectionable. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Hayter & Consolazio)

(Not Restricted)

X-497
Report No. 2
22 April '46

Methods for the Determination of Methylene Blue in Biological Fluids and Tissues.

Oxidized methylene blue was assayed by photocolorimetry using a filter transmitting light at a maxima of 600 mμ. The method was sensitive to 0.5 μ per gram.

For tissue homogenates, urine and diluted bile, addition of sufficient ethyl alcohol followed by centrifugalization gave clear supernatant fluids in which methylene blue was analyzed directly.

For analysis of blood and bile, methylene blue was first separated from interfering chromogens by adsorption and elution.

The only compounds measured by this method appear to be methylene blue and certain of its demethylated derivatives. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Eakin et al.)

(Not Restricted)

Reports on Research Projects (Cont.)

X-630
Report No. 6
10 May '46

The Principles of Protection of the Human Body as Applied in a Restraining Harness for Aircraft Pilots.

1. A restraining harness for aircraft pilots has been developed which has successfully protected volunteers against 2500 foot-pounds delivered on the impact decelerator by dropping a 500 pound weight five feet. This impact force expended in 0.15 seconds on a dummy enclosed in a semi-rigid harness is featured by 10,000 pound peaks as measured by strain gages.

2. The factors which contribute to the effectiveness of this harness are:

a. Distribution of the impact load over a large body area.
b. Distribution of the impact load to regions of the body best able to withstand high impact forces.
c. Gradual rate of application of force due to high initial elasticity of the material.
d. Damping of small irregularities during the period of impact.
e. The property of the material to elongate inelastically when the applied force reaches a predetermined tolerable limit, permitting the absorption of large amounts of energy.

(Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Bierman et al.)

(Not Restricted)

X719
(Bio. 57)
21 May '46

Spun Glass Fabrics (Ted. No. UNL255002) Test for Skin Irritations:

Two different samples of fiberglass fabrics which were represented as having been treated by the manufacturers to prevent loosening of particles of glass were tested to determine the irritative effects on the human skin by (a) usual patch tests, (b) sewing small pieces of the materials onto the inner surface of subjects' underclothing, (c) sewing small pieces of the materials onto

(Not Restricted)

Reports on Research Projects (Cont.)

X-719 (Bio. 57) (Cont.)

the outer surface of subjects' clothing and (d) rubbing the materials manually against the skin.

In general, no frequent or seriously deleterious effects of these samples of spun-glass wool on the skin were encountered. The reactions that did occur were only slight erythemas and not sufficient to permit differentiation between the two sample materials on the basis of irritability or to preclude their use where they are not exposed directly to the skin for long periods. (Med. Field Res. Lab., Camp Lejeune, North Carolina - Cowan and Leavitt)

Note: Those interested in seeing copies of the complete reports may address their request to the Research Division, BuMed.

Opinions or conclusions contained in these reports are those of the authors. They are not to be construed as necessarily reflecting the views or the endorsement of the Navy Department. Reference may be made to those reports marked "Not Restricted" in the same way as to published articles noting authors, title, source, date, project number, and report number.

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(Not Restricted)

Methyl Alcohol Poisoning: Since the issue of BuMed Circular Letter 45-95, the number of poisonings from the ingestion of methyl alcohol has diminished considerably. However, poisonings do still occur and some of them do result in death.

Investigation of the circumstances incident to recent cases reveals that in almost all instances the labels did not clearly indicate the nature of the contents. It evidently was not readily apparent to those who consumed the methyl alcohol that it was poisonous and that it would probably kill them.

In order further to reduce the morbidity and mortality resulting from the effects of methyl alcohol, the attention of all concerned is invited to the content of BuMed Circular Letter 45-95 (Bumed News Letter of 25 May 1945 and Navy Department Semimonthly Bulletin of 30 April 1945) with emphasis upon paragraph 5 which is recopied here:

5. It is recommended that the following precautions be taken by all ships and stations in handling, storing, issuing, and using methyl alcohol:

(Not Restricted)

(a) Make clear to all naval and Marine Corps personnel the distinction between methyl alcohol and ethyl alcohol. Methyl alcohol is a dangerous poison and must be handled as such.

(b) Maintain a close inventory of all pure methyl alcohol and any commercial product containing methyl alcohol. Release for use only the amount required, and at the time needed, to perform a specific job.

(c) Whenever possible substitute other less toxic solvents for methyl alcohol or products containing methyl alcohol.

(d) Add to methyl alcohol, if practicable, an ingredient such as ethyl mercaptan, kerosene, or white gasoline to give a disagreeable odor and taste which will discourage persons from using it as a beverage. The addition of kerosene or white gasoline in amounts of 0.5 per cent will have the desired effect, and will not alter the properties of methyl alcohol as a cleaner, paint thinner, or antifreeze.

(e) Require a prominent label to be affixed to all permanent or temporary containers of methyl alcohol, or products containing methyl alcohol, as follows:

POISON!
CONTAINS METHANOL
DO NOT TAKE INTERNALLY
DO NOT BREATHE VAPORS
AVOID SKIN CONTACT

(Professional Div. and Preventive Medicine Div., BuMed)

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(Not Restricted)

Use of Cocaine in Tonsillectomy: The attention of all concerned is called to Alnav 3 of January 2, 1946 which directed that the use of cocaine in tonsillectomy be discontinued. (Professional Div., BuMed)

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(Not Restricted)

New U.S. Marine Corps Dental Prosthetic Laboratory Trailer: Three of the newly developed DPL trailers have been delivered to the USMC Depot Quartermaster at Philadelphia by the Boyertown Auto Body Works. It is

(Not Restricted)

planned to assign a trailer of this type to each U.S. Marine Division to fill their long recognized need for a mobile dental prosthetic laboratory.

The laboratory is 17 ft. 10 in. long by 7 ft. 2 in. wide, and is mounted on a standard 4-wheel USMC trailer chassis. The built-in stainless steel work benches and cabinets are similar to those provided for ship DPLs under BuShips standard plan number 493658.

All electrical equipment is for 110 volt, 60 cycle alternating current, and may be powered either from an outside source or from an attached USMC 9.4KVA generator trailer of the 2-wheel type. Artificial gas is obtained from two 100-pound butane cylinders located in the rear storage compartment. (Dental Division, BuMed)

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(Not Restricted)

The Sir Henry Wellcome Medal and Prize: Competition for 1946: The competition is open to all medical department officers, former such officers, Acting Assistant and Contract Surgeons of the Army, Navy, Public Health Service, Organized Militia, Veterans' Administration, U.S. Volunteers, and the Reserves of the United States, commissioned officers of foreign military services, and all members of the Association of Military Surgeons, except that no person shall be eligible for a second award of this medal and prize. It should be understood that no paper previously published will be accepted.

The award of 1946, a gold medal and a cash prize of $500.00, will be given for the paper selected by a committee of the Association's vice-presidents which presents the most useful original investigation in the field of military medicine. The widest latitude is given for this competition, so that it may be open to all components of the membership of the Association. Appropriate subjects may be found in the theory and practice of medicine, surgery, dentistry, veterinary medicine, and sanitation. The material presented may be the result of laboratory work or of field experience. Certain weight will be given to the amount and quality of the original work involved, but relative value to military medicine as a whole will be the determining factor.

Five copies of the competitive paper identified by a nom de plume and not signed by the true name of the writer should be forwarded to the Secretary of the Association of Military Surgeons of the United States, Army Medical Museum, Washington, D. C., so as to arrive not later than August 31, 1946. They must be accompanied by a sealed envelope marked with the fictitious name or device assumed by the writer and enclosing his true name, title and address. The length of the essay should be from 3,000 to 10,000 words. The envelope

(Not Restricted)

accompanying the winning essay or report will be opened by the Secretary of the Association, and the name of the successful contestant announced by him. The winning essay or report becomes the property of the Association, and will be published in The Military Surgeon. Should the Board of Award see fit to designate any paper for "first honorable mention," the Executive Council may award the writer life membership in The Association of Military Surgeons, and his essay will also become the property of the Association. (Mil. Surgeon, April '46)

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(Not Restricted)

Public Health Foreign Reports:

Disease	Location	Date	No. of Cases
Cholera	Ceylon, Polonnaruwa	May 17-21, '46	23 (10 fatal)
	China, Hupeh Province	Apr. 1-30, '46	111 (25 fatal)
	Kwangtung Province	Apr. 1-30, '46	66
	Canton	May 1-10, '46	7
	Kiangsi Province		
	Shanghai	Apr. 1-10, '46	32
	Nanking	May 1-20, '46	47 (3 fatal)
Plague	China, Fukien Province	Apr. 1-30, '46	336 (131 fatal)
	Kiangsi Province	Feb. 21-Apr. 20, '46	66 (35 fatal)
Smallpox	China, Shanghai	Apr. 21-May 20, '46	111 (23 fatal)
	India, Bombay area	Apr. 20-27, '46	645 (149 fatal)
	Morocco (French)	Apr. 21-30, '46	83
	Venezuela	April '46	86
Typhus Fever	Ecuador	April '46	88 (8 fatal)
	Guatemala	March '46	64 (9 fatal)
	Mexico	April '46	121
	Morocco (French)	Apr. 21-30, '46	193
		May 11-20, '46	192
	Peru	March '46	55
	Turkey	May 18-25, '46	60

(Pub. Health Reps., June 7, 14 & 21, '46)

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(Not Restricted)
Pers-17, P3-2
11 June 1946

To: All Ships and Stations
Commandant, U. S. Marine Corps.

Subj: Maternity Care in Naval Hospitals and Dispensaries for Members of the Women's Reserves of the Naval Reserve, the Marine Corps Reserve, and Members of the Navy Nurse Corps and the Nurse Corps, Naval Reserve, Who Have Been Discharged or Separated From the Service Because of Pregnancy.

Ref: (a) SecNav ltr. Pers-170-EAN, P3-2, of 15 June 1945; AS&SL Jan-June 1945, 45-612, p. 80.

Enc: (A) Naval hospitals and dispensaries authorized to provide maternity care for subject-named women (revised list).

1. Enclosure (A) is forwarded herewith as a revision of enclosure (A) of reference (a).

--SecNav. James Forrestal.

Enclosure (A)

NAVAL HOSPITALS AND DISPENSARIES AUTHORIZED TO PROVIDE MATERNITY CARE FOR MEMBERS OF THE WOMEN'S RESERVES OF THE NAVAL RESERVE, THE MARINE CORPS RESERVE, AND MEMBERS OF THE NAVY NURSE CORPS AND THE NURSE CORPS, NAVAL RESERVE, DISCHARGED OR SEPARATED FROM THE SERVICE BY REASON OF PREGNANCY.

(Note: Admission to these hospitals must be restricted to available beds.)

The list of hospitals and dispensaries is arranged by geographic area of the districts for easy reference.)

HOSPITALS AND DISPENSARIES

First Naval District
Hosp.: Chelsea, Massachusetts
Portsmouth, New Hampshire

Third Naval District
Hosp.: Brooklyn, New York
Sampson, New York

Ninth Naval District
Hosp.: Great Lakes, Illinois

Eleventh Naval District
Hosp.: Long Beach, California
Oceanside, California
San Diego, California

(Not Restricted)

HOSPITALS AND DISPENSARIES (Con't)

Fourth Naval District
Hosp.: Philadelphia, Pa.
Disp.: U.S.Naval Air Station, Lakehurst, New Jersey

Fifth Naval District
Hosp.: Bainbridge, Maryland
Camp Lejeune, N. C.
Naval Operating Base, Norfolk, Virginia
Portsmouth, Virginia
Disp.: USMC Air Station, Cherry Point, North Carolina

Sixth Naval District
Hosp.: Charleston, South Carolina
Dublin, Georgia
Jacksonville, Florida
Parris Island, South Carolina

Seventh Naval District
Hosp.: Key West, Florida

Eighth Naval District
Hosp.: Corpus Christi, Texas
Norman, Oklahoma
Pensacola, Florida

Eleventh Naval District (Con't)
Disp.: U.S.Naval Ordance Test Station, Inyokern, California
U.S.Naval Air Station, San Diego, California

Twelfth Naval District
Hosp.: Mare Island, California
Oakland, California
Disp.: U.S.Naval Supply Depot, Clearfield, Utah
U.S.Naval Ammunition Depot, Hawthorne, Nevada

Thirteenth Naval District
Hosp.: Astoria, Oregon
Puget Sound, Washington
Seattle, Washington

Potomac River Naval Command
Hosp.: Bethesda, Maryland

Severn River Naval Command
Hosp.: Annapolis, Maryland

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To: All Ships and Stations. 3 June 1946 (Not Restricted)

Subj: Office of the Inspector, Medical Department Activities, Pacific-Relocation of.

1. Effective 3 June 1946, the office of the Inspector, Medical Department Activities, Pacific Coast, will be located in Room 418-420, Federal Office Building, San Francisco 2, California.

--ComWesSeaFron. V. H. Ragsdale.

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Circular Letter 46-100 28 June 1946 (Not Restricted)

To: All Ships and Stations.

Subj: U. S. Naval Hospital, Houston, Texas, Ready Date for Receiving Patients.

Ref: (a) OpNav letter Op13-1D-psp, Serial 353913, 7 4 56, 14 July 1945, Navy Dept. Bulletin 15 July 1945.

1. In compliance with paragraph 2 of reference (a) the readiness date for receiving patients at the U. S. Naval Hospital, Houston, Texas is hereby set as September 4, 1946.

--BuMed. Ross T. McIntire.

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Circular Letter 46-101 19 June 1946 (Not Restricted)

To: All Ships and Stations.

Subj: Transfer of NavMed Forms to the Central Publications Distribution System.

Ref: (a) NavExos P-35 (Rev. Nov. 1945) "Rules, Regulations, Policies and Standards for the Control of Navy Publications and Printing."

1. As arranged between the Bureau of Medicine and Surgery and the Publications Branch, Administrative Office, Navy Department, stocks of NavMed forms will be transferred to the Publications Distribution System in accordance with reference (a).

2. District activities in all naval districts, except 1, 3, 7, and 9 shall submit all requests for NavMed forms to their District Publications and Printing Office. District activities located in naval districts 1, 3, 7, and 9 shall send their requests to the East Coast Publications Distribution Center, Cheatham Annex, Williamsburg, Va. Advance base activities and the Fleet shall submit requests to the most conveniently located District Publications and Printing Office.

--BuMed. Ross T. McIntire.

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Circular Letter 46-102 29 June 1946 (Not Restricted)

To: MedOfComs, NavHosps.

Subj: Bath Towels and Toilet Soap; Issue of.

1. Sufficient bath towels will be procured to allow standard issue of same to all hospital patients. For initial procurement, four towels per bed of rated capacity is suggested.

2. Toilet soap will be made available for patients' individual use as needed.

- - BuMed. Ross T. McIntire.

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Circular Letter 46-103 29 June 1946 (Not Restricted)

To: MedOfsCom, NavHosps (Continental and Aiea).

Subj: Enlisted Wave Personnel; Hospitalization of.

1. In the interest of consolidation and conservation of personnel, enlisted Waves will, as soon as practicable but not later than 15 July 1946, be hospitalized only in the dependents' section of each hospital.

2. Enlisted Wave patients in hospitals which have no dependents' in-patient section, will, when practicable, be transferred in accordance with existing instructions to a hospital having such facilities.

--BuMed. W. J. C. Agnew.

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Circular Letter 46-104 (See page 30 of this issue).

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Circular Letter 46-105 8 July 1946 (Not Restricted)

To: Comdts, NDs, RivComds, AirTraComds
CO, MarCorpsAirStas (Cherry Point, N.C., El Toro, Calif., Miramar, San Diego, Calif., Quantico, Va., Ewa, Honolulu, T.H.).

Subj: Death by Violence, Preparation and Encasement of Remains.

Ref: Paragraphs 3420 - 3421, ManMedDept.

1. In a recent instance where a number of naval personnel were killed in a crash of an airplane there resulted considerable publicity unfavorable to the Navy with respect to the manner in which the remains had been prepared and encased, at least one casket having been opened for inspection purposes by relatives, contrary to the advice of naval authority. In this instance the plane had crashed high in a mountain, and the bodies and dismembered parts of bodies were recovered in frozen condition from deep snow and from trees. Taken to the nearest mortuary such arterial and injection embalming as practicable was done, the mutilated and frozen condition of the remains precluding complete embalming by usual methods. The remains were then packed without clothing or shrouding, in sawdust containing a "hardening compound", the caskets were sealed and marked with a warning against opening, which warning also was sent by telegram to the next of kin and to the receiving undertaker.

2. Regardless of instructions to the contrary, it is known that receiving undertakers, either with or without request from the family, on occasion will open such sealed caskets. It appears that the sensibilities of the next of kin and of others are particularly disturbed when a body is not clothed or shrouded, when the recovered parts of the body are not placed in proper anatomical alignment, when wounds are not closed or bandaged, when the mouth has not been closed and when no cosmetic restoration has been attempted.

3. It is desired, therefore, whenever there is an aviation or other accident involving death of naval personnel by violence, that the commandant having jurisdiction shall take measures to insure the proper preparation, clothing, encasement, and disposition of the remains, including detailed instructions to the undertaker having charge and provision for necessary inspection prior to release for shipment. The following instructions should be issued in such cases:

In event of advanced decomposition, maceration, mutilation or dismemberment of bodies, the bodies should be treated by any or all of the following procedures as found necessary:

(Not Restricted)

(a) Evisceration, in order to minimize leaking and facilitate preservation by either pickling or injection of vessels.

(b) Filling the body cavities with cotton or similar material saturated with formalin, followed by suturing of skin.

(c) Pickling by injection of vascular trunks and along bones, and by massive infiltration of muscles and other portions of the body, using full strength formalin, and wrapping parts in cotton soaked in formalin.

(d) Closure of all wounds by sewing and by supplementary bandaging if necessary.

(e) Use of the usual fungistatic and insect sprays as described in Hospital Corps Handbook.

(f) When sawdust is used to absorb moisture or leakage, place beneath the body enclosed in a porous bag to form a mattress.

(g) Obtain the best structural restoration and cosmetic results possible.

(h) Obtain and clothe or shroud with proper uniform clothing of the rank or rate and provide a National flag to accompany remains.

(i) Notify both next of kin and undertaker at destination that, due to circumstances of death, the remains are not in condition to be viewed and therefore, that the casket should not be opened.

--BuMed. Ross T. McIntire.

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Circular Letter 46-106 9 July 1946 (Not Restricted)

To: Commandants, Naval Districts and River Commands.

Subj: Health Records of Reserves Released to Inactive Duty.

Ref: (a) BuMed Circular Letter No. 46-60, dated March 29, 1946.

1. Reference (a) is hereby canceled.

2. Hereafter, the Bureau of Medicine and Surgery will submit requests to the District offices concerned for individual medical records or for copies of such records as may be necessary to meet the requirements of the Veterans Administration.

--BuMed. W. J. C. Agnew.

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ALNAV 301 5 June 1946 (Not Restricted)

Subj: Casualty Information.

1. Recent instances have occurred where next of kin in individual cases have received casualty information from press prior to notification through official channels. Most expeditious compliance with existing instructions governing casualty reports is necessary in order next of kin will receive official notification before press is given information. Casualty information will not be released to press by naval or MarCorps commands until sufficient time has elapsed to assure notification next of kin prior to publication.

2. Notification to next of kin casualties occurring within continental United States is responsibility of commanding officer and/or commandant of naval district. A minimum period of 12 hours should elapse from release of notification to next of kin to release of names to press to insure delivery notification telegrams to addressees. When reporting seniors within continental United States unable notify next of kin promptly, BuPers or MarCorps should be so informed by dispatch stating reason and furnishing all available casualty information.

3. Notification to next of kin of casualties occurring beyond continental United States is responsibility BuPers or MarCorps. Casualty information will not be released to press without prior approval BuPers or MarCorps. BuPers or MarCorps will normally complete notification within 24 hours after receipt of incoming casualty report. Release of names to press by BuPers or MarCorps will be made 12 hours following release of telegrams to next of kin.

4. Where multiple casualties will delay notification to next of kin due to lack of information or identification of all personnel involved, partial release of names to press will not be made without prior approval of BuPers or MarCorps.

--SecNav. John L. Sullivan.

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ALNAV 343 27 June 1946 (Not Restricted)

Subj: Dental Division of BuMed and Public Law 284.

Pursuant to Public Law 284 approved 28 December 1945 the following directive is effective as of 28 June 1946:

A dental division is hereby established in BuMed to plan and direct all matters relating directly to dentistry. Where dental services are or shall be established on ships and on shore stations, such services shall be under the senior dental officer who shall be responsible directly to the commanding officer thereof for all professional, technical, and administrative matters in connection therewith. Administrative action taken pursuant to foregoing shall be such as not to interfere with proper functioning of battle organizations. Dental reports and other communications shall be forwarded to BuMed or other higher authority via the commanding officer. The care and treatment of all dental conditions shall be directly under the control of the senior dental officer who shall be responsible to the commanding officer. For medical assistance in unusual and emergency situations and for organization and training for battle, dental personnel and equipment shall be under the command and control of the medical officer when so assigned, by the commanding officer, or as provided in battle and emergency bills. Logistics shall be provided under established procedure until such time as further directives and instructions are issued. Senior medical officers of all ships and stations shall transfer to senior dental officers on NavSandA 127 dental equipment supplies and such medical supplies as may be necessary. Supplies and equipment other than that under cognizance BuMed required for the operation and maintenance of the dental department shall be issued to the senior dental officer by appropriate custody or issue voucher. Refer SecNav serial 3369P21 of 27 June 1946 to be published in 30 June Navy Department Bulletin for amplification of foregoing. Changes in NavRegs, general orders, and bureau manuals and detailed directives and instructions required to implement will be promulgated soonest practicable.

--SecNav. John L. Sullivan.

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Circular Letter 46-104 8 July 1946 (Not Restricted)

To: Commandants, All Continental Naval Districts and River Commands, Medical Officers in Command, All Continental Naval Hospitals.

Subj: Separation of Women's Reserve and Nurse Corps Personnel During the Post-demobilization Period.

Ref: (a) AlStaCon 252105 of April 1946.
(b) BuMed Cir. Ltr. 46-96 of 20 June 1946.

1. Upon completion of the general demobilization program on or about 20 August 1946, the separation of Women's Reserve and Nurse Corps personnel at Separation Units and Activities (WR) will cease with the exception of personnel indicated in paragraph 2 of reference (a).

2. In view of the comparatively small number of Women's Reserve and Nurse Corps personnel being voluntarily retained in the Navy until 1 July 1947, the number of separations will be very small. Few personnel will be eligible for separation before 1 July 1947 unless they qualify in accordance with release policies currently authorized in "Policies for the Administration of the Women's Reserve", Change No. 1, NavPers 15,085, or unless their retention for a lesser period for completion of a specific assignment has been approved by the Bureau of Naval Personnel. No naval hospital should therefore be unduly taxed by berthing, messing, and otherwise processing these separatees.

3. On and after 21 August 1946, all Women's Reserve officer and enlisted personnel of the Navy, and all officers of the Navy Nurse Corps, who become eligible for separation honorably or under honorable conditions, except for those personnel indicated in paragraph 2 of reference (a), shall be transferred for separation processing in accordance with the instructions of this letter and enclosure 1, to the naval hospital nearest their duty station, irrespective of geographical limits of Naval Districts. Personnel entering the continental United States from duty stations outside will be ordered for separation to the naval hospital nearest their port of entry.

4. The following naval hospitals are authorized to effect all types of separations from the naval service in the case of officer and enlisted personnel of the Women's Reserve and officers of the Navy Nurse Corps:

(Not Restricted)

1st ND: U.S.N.H., Chelsea, Mass.
U.S.N.H., Newport, R.I.
U.S.N.H., Portsmouth, N.H.

3rd ND: U.S.N.H., Brooklyn, N.Y.
U.S.N.H., Sampson, N.Y.
U.S.N.H., St. Albans, N.Y.

4th ND: U.S.N.H., Philadelphia, Pa.

PRNC: U.S.N.H., Bethesda, Md.
U.S.N.H., Quantico, Va.

SRNC: U.S.N.H., Annapolis, Md.

5th ND: U.S.N.H., Bainbridge, Md.
U.S.N.H., Camp Lejeune, N.C.
U.S.N.H., Norfolk, Va.
Norfolk, N.H., Portsmouth, Va.

6th ND: U.S.N.H., Charleston, S.C.
U.S.N.H., Dublin, Georgia
U.S.N.H., Parris Island, S.C.

7th ND: U.S.N.H., Jacksonville, Fla.
U.S.N.H., Key West, Fla.

8th ND: U.S N.H., Houston, Texas
U.S.N.H., Corpus Christi, Tex.
U.S.N.H., Memphis, Tenn.
U.S.N.H., New Orleans, La.
U.S.N.H., Pensacola, Fla.

9th ND: U.S.N.H., Great Lakes, Ill.

11th ND: U.S.N.H., Corona, Cal.
U.S.N.H., Long Beach, Cal.
U.S.N.H., San Diego, Cal.
U.S.N.H., Oceanside, Cal.

12th ND: U.S.N.H., Mare Island, Cal.
U.S.N.H., Oakland, Cal.
U.S.N.H., Treasure Island, Cal.

13th ND: U.S.N.H., Bremerton, Wash.
U.S.N.H., Seattle, Wash.
U.S.N.H., Astoria, Oregon

5. Exceptions to the above are the following:

(a) No exception to Paragraph 3 above shall be made for women being separated by reason of pregnancy, unless such procedure would be prejudicial to the welfare of the individual, in which case authority for special action shall be requested of the Chief of Naval Personnel.

(b) Enlisted women who are to be separated as a result of disciplinary action or for reasons other than under honorable conditions, are to be transferred in accordance with BuPers ltr. Pers-913-ACG QR8/P19 dated 18 January 1946.

(c) Special cases in which the Bureau directs separation at an activity other than those listed in paragraph 4 above.

6. Naval hospitals listed in paragraph 4 above shall comply with the instructions contained in enclosure (1) in performing the function of separation. No additional personnel are believed to be needed for this purpose.

(Not Restricted)

7. It has been directed that prior to the transfer of enlisted personnel for the purpose of effecting discharge or release to inactive duty, commanding officers shall determine that records and accounts of such personnel are complete and fully up to date, that all directives regarding transfers are complied with, and in accordance with "Policies for the Administration of the Women's Reserve", Change No. 1, NavPers 15085.

8. Any previous instructions regarding the separation of female personnel which might conflict with this directive are hereby superseded.

9. Paragraph 1 of reference (b) is modified accordingly.

/s/ T. L. Sprague
T. L. Sprague
Deputy Chief of Naval Personnel
and
The Assistant Chief of the Bureau of Naval Personnel

/s/ W. J. C. Agnew
W. J. C. AGNEW
Acting Chief of Bureau
BuMed

Encls: (Sent to addressees but not reprinted here).
1. Manual of Procedures for Post-demobilization Separation Activities.
2. Copy of BuPers ltr. Pers-913-ACG QR8/P19 of 18 January 1946.

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